



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION II
26 FEDERAL PLAZA
NEW YORK, NEW YORK 10278

DATE: SEP - 4 1992

SUBJECT: Request for Ceiling Increase and Confirmation of Verbal Approval for Removal Action at Hexagon Laboratories, Bronx, New York - ACTION MEMORANDUM

FROM: *for* Charles E. Fitzsimmons, On-Scene Coordinator *K. Callahan*
Response and Prevention Branch

TO: Constantine Sidamon-Eristoff
Regional Administrator

THRU: Kathleen C. Callahan, Director *K. Callahan*
Emergency and Remedial Response Division

SITE ID NO.: AD

I. PURPOSE

The purpose of this Action Memorandum is to request a ceiling increase and confirmation of verbal approval granted on July 29, 1992, to conduct a time-critical removal action at the Hexagon Laboratory (Hexagon) site, 3536 Peartree Avenue, Bronx, New York. On July 7, 1992, the Emergency and Remedial Response Division received a referral from the New York State Department of Environmental Conservation (NYSDEC) for a removal action under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) as amended, 42 U.S.C. 9601 et. seq., at the Hexagon site.

This Action Memorandum recommends that a removal action be conducted pursuant to CERCLA to secure and stabilize the site by conducting such activities as inventorying, sampling for disposal analyses, and securing all containers on-site. A second removal action will be requested to dispose of the hazardous substances identified on-site. EPA anticipates (based on currently available information) that the response actions at the Site will not exceed \$2 million or the 1 year limitations set out in Section 104(c) of CERCLA, 42 U.S.C. §9604(c).

This removal action was initiated based on a verbal authorization given by Kathleen C. Callahan, Director, Emergency and Remedial Response Division on July 29, 1992. The total project ceiling authorized was \$250,000, with a mitigation ceiling of \$150,000.

This site is not on the National Priorities List (NPL) and there are no nationally significant or precedent setting issues associated with this removal action.

II. SITE CONDITIONS AND BACKGROUND

Hexagon was a chemical manufacturing firm which produced medicinal chemicals and pharmaceuticals. Fifty-five chemical compounds were reportedly manufactured by Hexagon during operational periods in 1986. Hexagon commenced operations in 1946 and ended in 1988, when the company entered bankruptcy. The manufacturing process at Hexagon included reactions, hydrogenation crystallization, centrifuging, drying and grinding. Raw materials and wastewaters were stored in approximately 27 aboveground and underground tanks and in a concrete lined drum storage area. Wastewaters underwent solvent separation and neutralization on-site prior to discharge into the city sewer system. Acids were reportedly stored in the aboveground tanks and organic compounds were stored in the underground tanks.

A. Site Description

1. Removal Site Evaluation

A removal site evaluation was performed by the Removal Action Branch on July 29-31, 1992. This inspection revealed approximately 600 various sized containers (10 to 55-gallon drums and various sized fiber containers), as well as at least 2500 small quantity laboratory chemicals. Approximately 400 drums are stored in the lower warehouse. There are also twenty-seven above and below-ground tanks, with their contents unknown. All containers are staged haphazardly and are stacked three high, with a number of them teetering. Portions of the plant building present physical hazards due to the crumbling of the building fabric, poor lighting, flooding, and dangling pipes. Although most of the drums are in the warehouse, there are many other containers scattered throughout the plant building in small and difficult to access rooms.

Three liquid samples were collected during the site inspection, for hazard categorization. Two of the samples were collected from flooded drains in the facility, and the third was collected from oily water that had migrated from the facility and puddled in the rear yard. The only hazard characteristic of significance noted was ignitability in the third sample. In general, air

monitoring conducted in and around the buildings, using an explosimeter, photoionization detector (HNU-PID), organic vapor analyzer (OVA) and radiation meter, did not detect any levels above background. There were several locations in the laboratory (organic) storage cabinets and in the vicinity of the oily puddle in the yard, where levels above background were noted.

2. Physical Location

Hexagon is located at 3550 Peartree Ave. in the Eastchester section of Bronx County, New York (see figure 1). The site occupies approximately one-half of a city block, approximately 57,000 sq. ft. in area. It is situated in a densely populated urban area with approximately 381,000 people living within a three mile radius. The site is bordered by Tufo's Wholesale Dairy Inc, to the east (adjoining building and parking lot), an apparent vacant building and lot to the south/southeast, and an active auto repair shop and auto salvage shop to the west across Peartree Ave. There are no potable water supply wells registered for the Eastchester/Baychester area of the Bronx.

The topography of Bronx County slopes gently southward to the East River. The topography in the vicinity of the site slopes toward the Hutchinson River, which is located approximately 800 ft. east. Most of the ground surfaces around the site are paved with asphalt or cement. Hexagon and the surrounding community obtain potable water from the Croton Reservoir, a main component of the New York City Water Supply System, located approximately 18 miles north.

3. Site Characteristics

The site includes four major structures: a.) a main building occupies 17,000 sq. ft., b.) a vapor phase control building located in the east yard, south of the main bldg., c.) a cylinder house located to the west of the vapor phase control building,

and d.) an unidentified structure in the vapor phase yard. The main building was constructed in three stages as designated below:

- o Old Plant constructed in 1948
- o New Plant constructed in 1956
- o New Wing constructed in 1970

The plant area includes two story batch reactor vessels, distillers, and centrifuges on the first floor and two laboratories and a chemical storage area on the second floor.

Over 400 drums are staged in the lower storage area of the warehouse at the north end of the main building. The drums are staged haphazardly, some stacked three high and teetering. A total of approximately 27 above and below-ground storage tanks are located throughout the plants and their associated open yards. Another 100 to 200 drums are scattered throughout the plants. Approximately 2500 laboratory sized chemicals are stored in the designated laboratory area. A large quantity, almost 50 percent, are unlabelled and therefore unknown.

4. Release or Threatened Release Into the Environment of a Hazardous Substance, or Pollutant or Contaminant

Some of the raw materials used by Hexagon during their operations include diethyl ketone, furan, methylene chloride, phenol, propionic acid, triethylamine, sodium hydroxide, and hexamethylene diamene. Some of the wastes generated include diisobutylene, ethylene dichloride, paramethoxy phenyl acetic acid, and still bottom waste. These materials are all designated as hazardous substances under the Resource Conservation and Recovery Act (RCRA).

A limited inventory conducted by the New York City Department of Environmental Protection (NYCDEP), in July of 1990, revealed the following materials in one of the stock rooms:

POISONS:

Bromobenzyl Cyanide, Brucine, Benzoyl Cyanide, Potassium Cyanide, Methyl Diisocyanate, Ethyl Cyanoacetate, Benzyl Aniline, Acrylonitrile, Diethyl Sulfate

WATER REACTIVES:

Lithium Amide, Sodium Aluminum Diethyl Dihydride, Sodium Methoxide, Sodium Borohydride, Sodium Methylate, Lithium Metal, Sodium Metal

REACTIVES:

Vinylidene Chloride

COMPRESSED GAS CYLINDERS:

Anhydrous Ammonia, Boron Trichloride, Boron Trifluoride, 1,3,-Butadiene, Carbon Monoxide, Chlorine, Dimethyl Amine, Ethylene Oxide, Hydrogen Bromide, Hydrogen Chloride, Hydrogen Sulfide, Isobutylene, Methyl Bromide, Methyl Chloride, Monomethyl Amine, Sulfur Dioxide, Trimethylamine, Monoethyl Amine.

An inventory assembled by members of the Removal Action Branch from July 29-31, 1992, confirmed most of the above and discovered numerous others. Based on available information on the facility's operations, the chemicals in the buildings are raw materials, chemical intermediates, mother liquors and wastes from the former operation. The chemical hazards include: potentially explosive, shock sensitive, water and air reactives, poisonous gasses, carcinogens, flammables, oxidizers, and corrosives.

The majority of the materials listed above are CERCLA designated Hazardous Substances, as listed in 40CFR Table 302.4, either specifically or as unlisted hazardous waste characteristics under RCRA Section 3001.

<u>Compound</u>	<u>Statutory Source of Designation as a Hazardous Substance</u>
Potassium Cyanide	CWA 311(b)(4)
Sodium Hydroxide	RCRA 3001
Methylene Chloride	CERCLA 304
Hydrochloric Acid	RCRA 3001
Sulfuric Acid	CWA 311(b)(4)

Historical information reveals that there have been two documented releases at Hexagon. On June 15, 1986, there was an indoor release of "toxic gas" from a reactor due to operational error. Then on June 30, 1986, an n-n dimethylamine spill occurred at the facility, which was caused by a ruptured high

pressure release disk located on the roof. An unknown quantity of n-n dimethylamine and isopropyl alcohol were sprayed over Hexagon's yard and adjacent facilities.

The mechanism for future releases to the environment includes deterioration of containers, improper disturbance and vandalism of the tanks, reactor vessels, ancillary piping, containers, laboratory chemicals, and cylinders. A substantial fire and

explosion hazard exists due to the materials present within the buildings. Cyanide compounds could react with acids and other reactives to produce a plume of high toxicity which would adversely impact the public health, welfare and the environment. Liquids, if released, could migrate from the warehouse storage onto Peartree Avenue and could access the Hutchinson River via storm drains.

5. NPL STATUS

This site is currently not listed on the NPL. The site received a Hazard Ranking Score of 5.1 in July of 1988. At the time of the site inspection, the facility was operating.

B. Other Actions To Date

1. Previous Actions

There have been no other previous Federal or private actions taken at the site. Reportedly when the company left the facility, between May and August of 1988, 300-400 drums of materials were either removed from the building or disposed of.

2. Current Actions

Due to the potential for an imminent and substantial release, the On-Scene Coordinator requested verbal authorization on July 29, 1992, to initiate site security and stabilization activities. The initial stabilization activities included implementing site security measures, segregation of incompatibles, and overpacking of suspect containers. Future stabilization activities under this removal action will include sampling and analysis of all containers.

C. State and Local Authorities' Roles

1. State and Local Actions to Date

The Director of the NYSDEC, Division of Hazardous Waste Remediation, requested EPA assistance to abate the public health and environmental threats posed by Hexagon Labs.

On July 3, 1990, the NYCDEP Division of Hazardous Materials Program discovered a number of extremely hazardous materials in one of the chemical storage rooms at Hexagon. With the assistance of the New York City Police Bomb Squad, 14 containers of ether compounds were removed for off-site treatment at the City's detonation range.

2. Continued State/Local Response

Neither NYSDEC or NYCDEP has the resources currently available to perform the necessary removal action at this site. Thus, these entities will act in a support role throughout the duration of this removal action.

III. THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

A. Threats to the Public Health or Welfare

A substantial fire and explosion hazard exists due to the types of materials present within the buildings. A release of these materials in this manner could adversely impact the densely populated area surrounding the site. Flammable, corrosive, reactive, explosive, and toxic materials have been stored together for many years exposed to water and other elements. The site has long been a nuisance from an air quality standpoint and now is also a threat from a fire and explosion scenario.

The containers and laboratory chemicals pose a significant threat to public health. Due to the types and quantities of chemicals, their extreme incompatibilities, the excessive number of years at which they have remained, the haphazard manner in which they were

abandoned, and the continued problem with unauthorized entries, the potential for a release is great if the materials are disturbed. There have been reports of trespassing onto the property by vagrants and drug addicts, which poses a threat to their health, and increases the risk to the workers/residents in the neighborhood.

Some of the containers are damaged and/or near the point of release. A few have started leaking. Chemicals that are air/water reactive, corrosive, flammable, oxidizers and poisons are all stored together, many of which are stored on top of each other. These classes, when commingled, would not only result in an increased violent reaction, but would subsequently increase the toxicity of the release. The excessive standing water in the buildings, as a result of pipe leaks and a damaged roof, poses another threat to the materials.

B. Threats to the Environment

The major threat would be from a release of a liquid substance which accessed one of the many catch basins in the street and subsequently reaches the Hutchinson River, a navigable surface water. For the most part however, due to the highly developed and commercialized area, the overall threat to the environment is expected to be minimal.

IV. ENDANGERMENT DETERMINATION

Actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response action selected in this Action Memorandum, may present an imminent and substantial endangerment to public health, or welfare, or the environment.

V. PROPOSED ACTIONS AND ESTIMATED COSTS

A. Proposed Actions

1. Proposed Action Description

Stabilization of hazardous substances, pollutants, contaminants and hazardous wastes is the proposed course of action. Stabilization activities will include segregation of incompatibles, as well as overpacking of select containers and sampling. All hazardous substances will be staged on the premises in a secure area. Containers will be segregated by existing identification labels and container condition to ensure proper segregation of incompatible materials. All containers will be sampled for compatibility and disposal purposes. A mobile compatibility lab will perform waste stream determination on site. Results will be known right away, thereby allowing for

cost savings and hazard determination. Manufacturers will be solicited to reclaim drums and containers which appear to have useable product. This proposed action does not provide removal of any of the material for off-site disposal.

2. Contribution to Remedial Performance

The proposed action will, to the extent practicable, contribute to the efficient performance of any long term remedial action. Remedial plans at this time are unknown. This removal action is consistent with any long term remedy action to be taken at this site, by stabilizing the source of the potential off-site contamination.

3. Description of Alternative Technologies

The only other alternative to this proposal is no action. Site stabilization activities which include staging and overpacking of containers, sampling and bulking are standard operating procedures. Due to the types of materials and the quantities found at this site, it is important that these activities commence in a quick and safe manner.

4. Applicable or Relevant and Appropriate Requirements (ARARS)

ARARS within the scope of this project include RCRA, CERCLA, OSHA, and DOT mandates, will be met to the extent practicable.

5. Project Schedule

Site stabilization activities commenced on July 29, 1992. Thus far, around the clock site security has been mobilized, chain link fence with barb wire has been erected in those areas where needed, windows and doors have been boarded to prevent access, a command post with utilities has been established and the necessary written plans (i.e., Health and Safety, Work and Sampling), have been finalized. It is estimated that it will take eight to ten weeks to complete the remainder of site stabilization activities. This includes staging, sampling and performing compatibility analyses on all containers. It is estimated that there are approximately 600 containers. Compatibility analysis will be completed on site.

B. Estimated Costs

A summary of the estimated costs for the proposed removal action is presented below.

1. Extramural Costs:

	<u>Current Ceiling</u>	<u>Estimated Additional Costs for this Project</u>	<u>Total Proposed Ceiling</u>
Regional Allowance Costs....	\$150,000	\$400,000	\$550,000
(Total cleanup contractor costs include labor, equipment, materials, laboratory disposal analysis, transportation and disposal) includes 20% contingency			

Other Extramural Costs:

Other extramural costs not funded from the regional allowance:

Total TAT, including multiplier costs.....	\$ 50,000	\$100,000	\$150,000
Subtotal, Extramural Costs..	\$200,000	\$500,000	
Extramural cost contingency (20% of subtotal).....		\$100,000	\$100,000
TOTAL EXTRAMURAL COSTS.....	\$200,000	\$600,000	\$800,000

2. Intramural Costs:

Intramural direct costs.....		\$ 25,000	
Intramural indirect costs...		\$ 50,000	
TOTAL INTRAMURAL COSTS.....	\$ 50,000	\$ 75,000	\$125,000

3. TOTAL REMOVAL PROJECT

CEILING.....	\$250,000		\$925,000
--------------	-----------	--	-----------

VI. EXPECTED CHANGE IN THE SITUATION SHOULD ACTION BE DELAYED OR NOT TAKEN

Delayed action will increase public health risks. Due to the types of hazardous substances, the volume of such and the proximity to the general public, it can be assumed that should no action occur, the situation will generally deteriorate and a major incident ensue.

VII. OUTSTANDING POLICY ISSUES

There are no apparent outstanding policy issues associated with this site.

VIII. ENFORCEMENT

A Potential Responsible Party (PRP) search is ongoing. There are a number of file cabinets with site historical information inside the main building. These files will be retrieved and reviewed pursuant to the July 31, 1992, access agreement in which Hexagon authorizes EPA to inspect and duplicate documents and records at the Site. It is anticipated that a number of PRPs will be identified and "Request for Information Letters" will be issued pursuant to Section 104(e) of CERCLA, 42 U.S.C. §9604(e).

IX. RECOMMENDATION

This decision document represents the selected remedy for the Hexagon Laboratories site in Bronx, New York. It has been developed in accordance with CERCLA as amended and consistent with the National Contingency Plan (NCP). This decision is based on the Administrative Record and visual inspection of the site.

Conditions at the site meet the NCP Section 300.415(b)(2) criteria for a removal action and I recommend your approval of this proposed action. The total project ceiling will be increased by \$675,000 for a total of \$925,000, including the additional funds that were verbally authorized on July 29, 1992. The estimated costs of \$400,000 requested for mitigation contracting will come from the Regional Advice of Allowance for FY-92.

Please indicate your approval and authorization of funding for the Hexagon Laboratories site, pursuant to your authority delegated by Assistant Administrator J. Winston Porter, May 25, 1988, Delegation Number R-14-1-A.

Approved: _____

Constantine Sidamon-Eristoff
Regional Administrator

Date: _____

9/4/92

Disapproved: _____

Constantine Sidamon-Eristoff
Regional Administrator

Date: _____

cc: (after approval is obtained)

C. Sidamon-Eristoff, 2RA
W. Muszynski, 2DRA
K. Callahan, 2ERR
R. Salkie, 2ERR-ADREPP
B. Sprague, 2ERR-RPB
W. McCabe, 2ERRD-NY/CP
G. Zachos, 2ERR-RAB
J. Daloia, 2ERR-RPB
J. Marshall, 2EPD
E. Schaaf, 2ORC-NYCSUP
R. Gherardi, 2OPM-FIN
S. Luftig, OS-210
S. Becker, 2ERR-PS
M. O'Toole, NYSDEC
C. Moyik, 2ERR-PS
T. Grier, OS-210
J. Rosianski, 2OEP
C. Kelley, TATL
P. McKechnie, 2IG